found to be effective for controlling overactive, aggressive, and disturbed behaviour in psychotic patients and to be superior to chlorpromazine for treating inert, withdrawn, and apathetic schizophrenics, in whom it had an altering effect, increasing both initiative and interest in the environment. Prochlorperazine is valuable for the management and treatment of alcoholism, as it relieves tension and anxiety, promotes natural sleep, and controls nausea and vomiting.

Side-effects are uncommon when the daily dose is below 40 mg. Above this dose restlessness and insomnia may occur, and with doses between 75 and 100 mg. extrapyramidal manifestations are frequent. These consist in Parkinsonian rigidity and sometimes the "excitomotor" syndrome—that is, stiffness of the jaws, followed by trismus, spasmodic protrusion of the tongue, lip tremors, speech difficulties, torticollis, conjugate eye deviation, choreoathetoid movements, excessive sweating, and tachycardia. These effects are readily abolished either by drugs that inhibit the symptoms of Parkinson's disease or by reduction in dosage.

Perphenazine

This drug is approximately five times as potent as chlorpromazine and has fewer side-effects. It does not produce drowsiness; on the contrary, some patients experience increased alertness and restlessness. Its main disadvantage is the tendency to cause extrapyramidal manifestations, particularly when the daily dosage exceeds 32 mg. These consist in dystonic disturbances such as trismus, oculogyric crises, and tonic neck contractions, which sometimes spread to the muscles of the back and produce opisthotonos. Parkinsonian rigidity sometimes occurs. These extrapyramidal effects can be controlled or abolished either by anti-Parkinsonian drugs or by reduction of dosage.

Perphenazine is effective in the treatment and management of acute schizophrenia and acute schizoaffective disorders, and for controlling excitement, anxiety, agitation, belligerence, and aggressive behaviour in chronic schizophrenia and other forms of chronic psychosis. The drug helps to relieve anxiety, tension, and depression in psychosomatic disorders and physical illnesses or disabilities. It is also indicated in cases of nausea and vomiting—for example, when these are associated with pregnancy, follow surgical operations or radiation therapy, are due to drugs, or have a psychogenic origin. Other uses are for the relief of intractable pain and associated emotional distress, and the treatment of drug addiction, particularly the management of withdrawal symptoms.

Trifluoperazine

Trifluoperazine is about nine times more potent than chlorpromazine, having a more rapid onset of action and a more prolonged effect, which makes it unnecessary for administration to be more frequent than twice daily.

This drug helps to control disturbed behaviour, aggressiveness, hallucinations, and paranoid delusions in acute and chronic psychoses. It is more effective than chlorpromazine for treating withdrawn, apathetic, and inert schizophrenics, in whom it usually produces increased alertness, initiative, and energy.

In milder psychiatric disorders trifluoperazine is helpful for relieving anxiety, particularly when associated with listlessness and apathy, as it tends to restore initiative, increase energy, and improve concentration concomitantly with relief of anxiety.

Conclusions

The phenothiazine derivatives introduced after the discovery of chlorpromazine vary greatly in potency, therapeutic effects, and toxic actions.

Chlorpromazine has stood the test of extensive trial since it was first introduced nine years ago.

Promazine, though free from risk of producing jaundice, is less potent and has other serious toxic effects. It has a place in the treatment of alcoholic disorders and in patients in whom hypotension presents a serious hazard. The available evidence indicates that acetyl promazine and mepazine have no advantage over chlorpromazine and have more unpleasant side-effects. Laevopromazine is indicated when greater sedation is needed and is of some value for relieving anxiety and agitation in depressive states, though it does not appear to improve the underlying depression.

The piperazine phenothiazine substituents such as prochlorperazine, perphenazine, and trifluoperazine are more potent and less toxic than chlorpromazine but have a greater tendency to cause extrapyramidal reactions. They are more effective than chlorpromazine for treating inert, withdrawn schizophrenics. The recently introduced thioridazine is reported to be relatively free from side-effects and toxic actions and to be a pure psychosedative. Further fully controlled trials on thioridazine, trifluopromazine, and thio-propazate are necessary before their value and limitations can be assessed.

In conclusion we may say that the discovery of chlorpromazine and subsequent allied phenothiazine derivatives has opened new fields of therapeutics in medicine and surgery. In psychiatry phenothiazine derivatives have played an important part in the rapidly developing field of psychopharmacology, which is of great promise for advancing our knowledge of the causation as well as treatment of mental disorders.

REFERENCE

Laborit, H., and Huguenard, P. (1951). *Presse méd.*, **59**, 1329.

SOME PROBLEMS OF THE MEDICAL SERVICES OF THE FEDERATION OF RHODESIA AND NYASALAND

BY

H. S. GEAR, M.D., D.P.H., D.T.M.&H.
Consultant to the Federal Ministry of Health

That part of Africa now forming the Federation of the Rhodesias and Nyasaland has a recorded history of less than a hundred years. This history has greatly influenced the trend followed by the medical services of the Federation since they were formed in 1954, the year after the constitutional decisions were taken. When Livingstone explored the area it was the scene of slave-raiding, intertribal war, and uninhibited disease. Though the missionary societies soon set up their stations, little was altered until Cecil Rhodes turned his

eyes northwards. He determined the form taken by each of the three territories, so that in due course they became British.

Southern Rhodesia

Cecil Rhodes's Pioneer Column, entering Southern Rhodesia in 1890, led to those permanent settlements which took over responsible government from his British South Africa Company in 1923. Medical needs were met by the private practitioners who came with the settlers. The then simple governmental responsibilities were conveniently discharged in each magisterial district by an arrangement with one or more of the local practitioners. This system of district surgeons was absorbed into an official salaried service in 1920 and taken over by the responsible Government granted to the country in 1923. Though private medical practice was fully accepted during this time, the hospitals of Southern Rhodesia somewhat paradoxically have evolved as Government institutions, with the exception of the Bulawayo Hospital, which was operated by its own board until 1925, when it also passed under the control of the Southern Rhodesian Government.

Thus by 1953, the year of Federation, Southern Rhodesia had responsible government and managed its own affairs. It had a system of private medical practice, at least in the major settled communities, and of salaried Government medical officers and of Government hospitals in each district. Noteworthy, too, was its initiation of a system of rural clinics providing for rural African out-patient care, simple bed-treatment, and various preventive medical and public-health services. Government hospitals and clinics in 1953 had 5,437 beds for Africans, and were attended by nearly 2,000,000 out-patients. In addition it is to be remembered that the medical care given by missions was considerable, including in 1953 stations throughout Southern Rhodesia with 1,471 African hospital beds served by 16 resident medical officers.

Northern Rhodesia

The ultimate British character of Northern Rhodesia was also due to Cecil Rhodes's initiative, as his British South Africa Company assumed the control of this vast territory in the last decade of the nineteenth century. However, it did not become the home of any substantial communities of British settlers, as had Southern Rhodesia until well into the twentieth century, when the launching of base-metal mining in Broken Hill and on the copper-belt of the North established relatively large European towns in those areas.

Medical services were consequently rudimentary in the earlier decades, with a medical officer and a simple hospital to be found only in the more important administrative posts. In 1924 the administration of Northern Rhodesia was transferred from the British South Africa Company to the Colonial Office. Its medical services then became fully governmental, with salaried medical officers and nurses. By 1953 (date of Federation) much progress had been made in opening new rural hospitals and clinics. Besides the increase in missionary medical work, the most significant occurrence medically, as in every other sphere before Federation, was the growth of the great copper-mining industry of the Western Province. It established generous hospital and allied services which are still a model for the whole Federation.

On the eve of Federation there were 57 Governmental medical officers and 151 nursing sisters in the Northern Rhodesian Service, and out-patient attendances were over two million for the year. Northern Rhodesia then showed three distinct medical elements—governmental, industrial, and missionary—each to influence the later federal character. Private practice was negligible.

Nyasaland

Nyasaland owes much throughout its short modern history to the missionaries who so soon followed Livingstone; but it was again Cecil Rhodes who determined its survival as a British territory. It was the British South Africa Company which at his instigation enabled the missionaries and their trading corporation to combat the slave-raiders. Nyasaland has differed from Southern Rhodesia in not having had any large European settlements based on farming, and from Northern Rhodesia in having no mining industry. This left the missionaries as the early predominant medical force and denied any opportunity for private practice.

Nyasaland, like Northern Rhodesia, became a Protectorate and so assumed a full service of governmental hospitals and clinics. It had 27 medical officers and 34 nursing sisters, with 1,208,000 out-patient attendances in its governmental hospitals and clinics, which by 1953 had been extended to serve all districts to some degree.

On the eve of Federation each territory had thus certain medical distinctions. Southern Rhodesia had private medical practice, and consultants and specialists in the two main centres of Salisbury and Bulawayo. Northern Rhodesia had its vigorous private industrial medical service, and Nyasaland had the prominence of the medical mission. The two northern territories of Northern Rhodesia and Nyasaland had one important common feature—their governmental medical services were part of the United Kingdom Colonial Service and hence were controlled from and attuned to London. Contrariwise, the Southern Rhodesian governmental medical service was local and independent. In this difference between the two northern, on the one hand, and the southern territories, on the other, lay much of the future difficulty facing the Federal Ministry of Health in its amalgamation of the three services.

Changes at Federation

The previously separate three territories were combined in the Federation in 1953, following on the referendum in Southern Rhodesia, and the legislative decisions of Nyasaland, Northern Rhodesia, and the United Kingdom. Among the responsibilities then placed on the Federal Government was that of "health." This was somewhat unusual, as health matters in other federal systems of government have mostly been accepted as of "local" concern to be administered by "provincial" governments. Certain "health" duties, even in a federation, are, however, invariably discharged by the "central" Government, including, for example, quarantine control, international medical liaison, national medical research, and frequently drug control.

In the present instance the Constitution established "health" as a Federal responsibility and the Federal Government achieved it by placing the three territorial health services under a newly created Ministry of Health

in 1954. Theoretically it is still open to each of the Territorial Governments to operate "health" services, as the Federal Constitution included "health" in a so-called "Concurrent Legislative List." This entitles both the Federal and the Territorial Governments to enact health legislation. There is little likelihood now, however, of any territorial legislature exercising this privilege in view of the existence of the substantial Federal services and the onus on a territory to find funds for its own ventures.

A practical difficulty has been discovered in the Federal Constitution in that the word "health" there used has hitherto defeated legal definition. No Federal public-health legislation has consequently yet been possible—a considerable handicap. Certain other constitutional decisions were also to confuse and even obstruct the Federal Ministry of Health in its intention to prepare a well-rounded health and medical service for the whole country. African—that is, indigenous population—affairs generally were made the responsibility of each Territorial Government, as were local government, environmental sanitation, and social welfare. The natural interdependence of these with medicine and health, separated constitutionally, is the explanation of much of the uncertainty of the legislative, and of the awkwardness of the administrative relationship in these fields between the Federal and Territorial authorities.

The change-over for the staff from three separate territorial services to the single Federal medical service was unfortunately spread over five years. This followed on the option given to every territorial officer and available until June 30, 1959, to declare his intention of transferring to the Federal Service or of accepting retirement on compensation. This device was administratively doubly awkward. In the critical formative five years of the new Federal Ministry of Health no clear knowledge was ever possible of the staff potential; and, secondly, the attractive retirement compensation contributed to the decision of many valuable officers to withdraw. They were then lost to the hard-pressed new Service. The numbers on January 30, 1959, who had so left were: professional officers, 48; technical officers, 11; nursing officers, 53; clerical officers 10—a total of 122.

Any amalgamation of separate services is difficult. That undertaken by the Federation was exceptionally so, not least being the instability and uncertainty of the staff position through these five critical years, when, to make matters worse, the demand for medical services was growing rapidly.

Only a short reference is needed here to the organization set up under the Ministry. Its headquarters under the Secretary for Health were naturally set in the Federal capital—Salisbury. There is a Federal Advisory Board of Health. A Director of Medical Services is the head of the Federal organization in each territory, to whom much executive power has been delegated. However, this officer, in addition to undertaking the general directives of the Federal Secretary for Health, is the adviser to the Territorial Government on health aspects of purely territorial questions. To him is delegated the general executive responsibility for the governmental curative and preventive services—the hospitals, the clinics, and the district medical services. These roughly cover the whole Federation outside the very small number of local

authorities possessing their own health departments, such as Bulawayo, Salisbury, Lusaka, and Ndola. The Federal Ministry has therefore unavoidably perpetuated a governmental and official system for giving medical, nursing, and hospital services to the overwhelming majority of the population. With rare exceptions elsewhere it is only the non-African population of Southern Rhodesia and the industrial communities of Northern Rhodesia who are not entitled to the free official services, and so lie outside the scope of the Federal curative services. Medical insurance schemes are inevitably small.

The organization established on Federation inevitably continued the emphasis on curative services. As is the case in all countries, these had been prominent in the early pioneering phase of each territory, and naturally were essential in carrying modern medicine to the primitive tribes, previously suspicious of the modern hospital. So it was the hospital and out-patient clinic services, taken over by the Federal Ministry, which had to be primarily supported. However, the Southern Rhodesian arrangement of a separate provincial system of medical officers responsible for preventive medicine was maintained. The research tradition, previously strongest in Southern Rhodesia, was centred in the Laboratory Services of the Ministry, no separate organization being created after Federation.

The historical pattern was thus generally renewed in each Territory after Federation—namely, (1) a Government medical service operating through hospitals and clinics in each district, catering free of charge for all Africans and large sections of non-Africans. In the latter case these were civil servants, police, etc. (2) Curative services continuing to absorb the bulk of the resources of men and money. (3) Local matters of civic administration, African affairs, etc., unaffected by the Federal Constitution. (4) Private practice, significant only in the larger urban communities of Southern Rhodesia. (5) The medical mission of various denominations, prominent in each territory but outstandingly in Nyasaland. (6) The mining communities, but especially in the copperbelt of Northern Rhodesia, continuing to be responsible for their own medical and health care.

The constitutional effect of Federation was immediately administrative. It produced amalgamation of services, centralized financial allocation and control, and concentrated direction of policy in one headquarters (Salisbury). It caused some confusion in separating responsibility of related subjects from the responsible health authority (the Federal Government).

Trends Since Federation

The Federal Ministry of Health has had five extremely difficult years since it was formed in 1954. The usual problems of launching a new service were both lessened and aggravated by its emergence from pre-existing territorial services. On the one hand, there was no interruption of services. There was the employment of experienced people and the use of tried methods by a network of hospitals and clinics already covering the whole country.

Conversely, the Ministry suffered the newness of the whole constitutional experiment, its trial in times of political and social transformation, and the mutual adjustment required from two groups of public servants differing so widely in traditions and practices,

TABLE I.—Population at December 31, 1936, and 1959*

	Southern Rhodesia		Northern Rhodesia		Nyasaland		Total	
	1936	1959	1936	1959	1936	1959	1936	1959
African	1,260,000	2,670,000	1,400,000	2,310,000	1,790,000	2,780,000	4,450,000	7,760,000
Coloured and Asian .. .	5,500	15,800	1,000	9,900	1,500	12,400	8,000	38,100
European .. .	57,800	218,000	10,500	75,000	1,800	9,000	70,100	302,000
Totals (to nearest 10,000)	1,320,000	2,900,000	1,410,000	2,390,000	1,790,000	2,800,000	4,530,000	8,100,000

* Report of the Commission of Inquiry into the Health and Medical Services of the Federation, p. 1. Government Printer, Salisbury, 1960.

founded on Southern Rhodesia in the one case and the United Kingdom Colonial Office on the other.

Certain examples of what has been, and is, taking place are selected for observation.

(a) Social Change

Two items of social change have dramatically affected the medical, and indeed all, services of the Federation.

Firstly, there has been the phenomenal growth of its African population. This is effectively shown by Table I. The African population, previously limited by slave-raiding, tribal wars, uncontrolled famine, and disease, is now growing at the disturbing rate of approximately 3% per year.

Secondly, this section of the Federal population is rapidly abandoning its previous pastoral, almost neolithic life. It is not only absorbing European ways avidly but is flocking to the European towns and industries. One relatively recent facet of this change has been the insatiable demand for European medicine. Where less than a quarter of a century ago the large majority of Africans avoided European hospitals and clinics, they are now overwhelming them. Undoubtedly many things explain this, including the general acceptance of European culture and education, and the successful demonstration of scientific medicine, particularly in its use of the salvarsans, sulphonamides, antibiotics, and modern insecticides. There is much evidence, too, to support the claim that there is a certain glamour or prestige with many in having experiences of modern medicine. It is this fashionable factor which is advanced to explain the astounding numbers of African women in many towns who now desire to have their confinements in hospitals and so harass an overstrained service even more.

(b) Growth of the Medical Services

Table II, taken from the Annual Reports on the Public Health for the Federation, gives the main changes. Without exception the increases are impressive, and especially in the provision of services in the two northern territories.

TABLE II

		Southern Rhodesia	Northern Rhodesia	Nyasaland
Recurrent expenditure (£ sterling)	1953	2,202,245	1,091,390	273,172
	1958	3,780,095	2,069,973	815,794
	1959	3,655,031	2,170,266	775,219
Capital	1953	544,521	95,754	26,082
	1958	142,429	818,928	198,554
	1959	272,655	399,107	85,373
Medical officer establishment .. .	1953	95	60	38
	1958	116	78	46
	1959	152	84	48
Trained nursing establishment .. .	1953	475	151	34
	1958	718	303	57
	1959	728	321	57
Grants to medical missions (£ sterling) .. .	1953	53,233	73,098	10,330
	1958	160,600	145,600	72,000
	1959	122,867	117,122	36,282
Grants to local authorities (£ sterling) .. .	1953	83,034	24,468	810
	1958	125,000	80,000	11,000
	1959	88,510	86,185	2,342
Admission of African patients to Government hospitals, clinics, and dispensaries .. .	1953	206,514	58,237	35,919
	1958	324,391	117,719	63,953
	1959	326,005	131,900	66,719
African out-patient attendances, Government hospitals, clinics, and dispensaries .. .	1953	1,892,060	2,196,993	1,208,971
	1958	3,089,939	5,610,688	4,216,723
	1959	3,878,030	6,911,545	3,152,179

Table II is confirmation, too, of the general policy followed by the Ministry to distribute its services relative to needs. Previously Southern Rhodesia, under its own administration, had advanced further than its Colonial Office neighbours. The balance has now largely been adjusted by accelerating the rate for Northern Rhodesia and Nyasaland.

All elements of the service have been enlarged—more hospital beds, more clinics, more medical and nursing officers, more consultants, and greater assistance to local authorities and medical missions. This policy of expansion, followed so vigorously by the Ministry of Health, and more particularly in the two northern territories, is also directly revealed in the growth of expenditure shown in Table II.

Recurrent expenditure between 1953 and 1959 has increased 50% for Southern Rhodesia, over 100% for Northern Rhodesia, and nearly 300% for Nyasaland. That "health" has been accepted as a serious Federal responsibility is further borne out by the following figures for the estimates of expenditure to be defrayed from Revenue funds for the year ending June 30, 1960, as presented to the Federal Assembly:

	£
Total estimates	54,084,848
Some major items:	
Public debt	11,963,227
Education	6,998,001
Health	6,965,109
Posts and telegraphs .. .	4,890,000

Praiseworthy though this Federal effort is, it lags behind the demand from the emerging and multiplying African for European medicine. The increasing population and its absorption into towns and industry are movements too rapid to be overtaken by the expansion already achieved in the number of hospital beds, clinics, doctors, and nurses. Throughout each territory the sights are the same—overcrowded wards, lines of out-patients, and overworked doctors, nurses, and auxiliaries. Even a long-established smoothly functioning medical service would have been taxed by this modern phenomenon of the African peoples of the Federation. It has been almost too much to bear for a newly formed Federal organization feeling its way through so many difficult and daunting "teething" troubles.

It would almost certainly be wrong to argue that the clamant cry for European medicine would have been more smoothly or effectively answered if "health" had remained under each territory. Indeed, the position would likely have been worse for the northern territories unless specially supported. If Nyasaland had itself continued its pre-Federal rate of medical progress or even doubled it after Federation, it would still have faced a serious crisis.

Further, the strength of the combined resources used in terms of a vigorous Federal policy of expansion has enabled all three territories to benefit from several medical advantages which a territory would have found difficult to secure separately. Such have been the more comprehensive consultant and specialist services; an acceleration in building programmes because of the readier mobilization of the assets of men and materials of the territories; a distinctly fuller supply system; and a more flexible use of medical and nursing staffs with the very much larger available establishment.

(c) Changing Disease Patterns

The dramatic changes in the pattern of disease during the last half-century in the Federal territories throw the

statement above concerning overworked hospitals and clinics into even more striking relief. Many of the earlier serious diseases have been controlled and reduced, yet more patients come forward. Malaria is being tackled vigorously. It has declined significantly in all but a few remote districts as a serious cause of both illness and death. Yaws, in consequence partly of the African shedding the misery and primitiveness of his earlier tribal ways and partly of modern therapeutic campaigns, is now almost unknown. Tropical ulcer, debilitating and disfiguring in so many Africans not so many years ago, is falling rapidly in incidence in most districts. The venereal diseases are declining everywhere too before the effectiveness of the modern antibiotics, which have achieved popularity in even the remote villages. Trypanosomiasis (sleeping sickness), so feared in Northern Rhodesia only thirty years ago, still occurs, but is no longer a major scourge even in the notorious Loangwa Valley. Few cases have occurred in recent years in Southern Rhodesia and Nyasaland. Smallpox appears occasionally but no longer is allowed to run riot. Thus the notorious tropical diseases of the earlier part of the century have largely been conquered by a combination of preventive and curative medicine, better sanitary and environmental conditions, more and better food, and less ignorance.

Certain communicable diseases still prevail. Bilharziasis is widely prevalent but is being vigorously combated, especially in Southern Rhodesia, which, long before Federation, was noted for its research into practical control measures against both the vector snails and the causative schistosomes. Tuberculosis is unfortunately increasing, especially among the urbanized African. As the Annual Report for 1958* states: "In all three regions the number of cases of tuberculosis, particularly pulmonary disease requiring treatment, is assuming increasingly serious proportions. . . . A most encouraging development has been the increase in treatment of arrested cases of pulmonary tuberculosis as out-patients. . . ."

As in most similar rural communities in other parts of the world the salmonella and shigella infections still play havoc among children and infants. Malnutrition, however, is reported by most district medical officers to be declining.

This generalized and somewhat simple account scarcely does justice to the change which has taken place so quickly in the prevalence of disease, especially that of the communicable type. It has been dramatic, particularly in recent years. Most noteworthy is the inclusion of all groups and races of the community in the improvement. The emerging rural African, as well as the more sophisticated urban European, has shared in the transformation. In bringing this about, modern medicine, the establishment of law and order, and the removal of starvation must accept the responsibility for the population upsurge now occurring.

(d) Administrative Change

It has been natural that such a change as amalgamation of three separate medical services should result in the problems of administration being most pressing in its first five years of operation. Many and awkward though these have been, only one is referred to here—it is the recently increasing seriousness of staffing the Federal Service.

Staff adjustments to amalgamation are serious within a single public service. Amalgamation of units and people previously owing allegiance to and accustomed to the procedures of such differing institutions as the local Southern Rhodesia Government and the remote Colonial Office in London was unlikely to occur without rumblings. Many people previously members of the large United Kingdom Colonial (Overseas) Service who elected to transfer to the Federal Service have subsequently not unexpectedly doubted sometimes the wisdom of their choice. Their families regret the disappearance of the regular "home" leave to the United Kingdom. They wonder, too, sometimes if they

have backed the "wrong horse" with the political "climate" of Africa apparently worsening day by day. They are occasionally at sea in a public service directly under the eye of a local parliament and with a full machinery of checks and controls. Inevitably there have been some with nostalgia for the "good old Colonial days" who have become discontented and even critical of their new service. Then, too, there is the present anxiety in all sections concerning the future of the Service on which they are dependent for prospects both for a satisfying career and for their "bread and butter."

Such are some of the causes of the present ebb of staff morale. There is little likelihood of an immediate improvement in the political and economic uncertainties, especially as their resolution is governed by so many unpredictable local and overseas influences. There is no suggestion here of the Service not loyally discharging its responsibilities. Indeed, its achievements in dealing with both ordinary and extraordinary difficulties in its formative years are remarkable. But as even its unity as a service now seems threatened its members can forgivably be troubled.

A less emotional but nevertheless related serious feature of the present accelerating trend of events is the impossibility of maintaining the numbers of the staff. The burgeoning of demand for medical attention can be controlled only by a rapidly expanding service. Efforts to recruit doctors, nurses, and auxiliaries from every possible source, local and overseas, are not now even meeting the usual wastage due to retirement and resignation. Doctors and nurses of the United Kingdom in the last year or two, presumably for a variety of reasons, have not been attracted by the Federal Service. Undoubtedly the opportunities are now relatively better for them in their home country, but also the very element of uncertainty which plagues the existing local service repels people from overseas.

An indication of the seriousness of the hospital staff position has been given by the recent Commission of Inquiry into the Health and Medical Services of the Federation (the Morton Committee), which states: "On July 1, 1959, there were 52 (14.1%) vacancies in the Professional Officer establishment of 369, 35 (18.5%) in the technical establishment of 189, and 81 (7%) in the trained nursing establishment of 1,156."*

The Commission puts forward a number of proposals to improve the staff position on such matters as further delegation of authority from headquarters, methods of recruitment, betterment of salaries and other conditions of service, and the limited use of private medical practitioners in Government hospitals.

Clearly, the widening gap between the rapidly growing number of patients and the almost stable staff is the immediate major administrative problem facing the Federal Ministry of Health. There are more remote prospects of closing this gap if various proposals to produce doctors, nurses, and auxiliaries locally can be carried out. It is therefore scarcely questioned now that to train their own doctors, nurses, midwives, laboratory technicians, and related groups is an urgent obligation of the various public authorities of the Federation. Imaginative proposals have been put forward by the Medical School Planning Committee, appointed by the University College of Rhodesia and Nyasaland (the Farrer-Brown Committee). The Committee urged that a school should be established at Salisbury as soon as practicable and emphasized that it "must be first-class in every way—in conception, in staffing and in its products," and that "it must conduct research as well as teach."† This important medical and educational proposal is now being examined.

The training of nurses, which will mean mainly Africans, in the future is of exceeding urgency and importance. It also is a race against the flood of patients. African

*Annual Report on the Public Health of the Federation of Rhodesia and Nyasaland for the 1958, p. 11. Government Printer, Salisbury.

*Commission of Inquiry into the Health and Medical Services of the Federation, 1960. Government Printer, Salisbury.

†First and Second Reports of the Planning Committee, *Cent. Afr. J. Med.*, 1958, 4, 269; 1959, 5, 145.

emergence being so recent explains the regrettable lack of adequately educated local girls to take up nursing. An acceleration of the education of Africans up to the entry standard of the nursing training schools and an increase in due course of the numbers of these schools suitably distributed throughout the Federation to cater for local tribal and language conditions are the general measures required. To meet them is a problem for solution through the co-operation of the Federal Ministries of Education and Health and the relevant territorial authorities.

General Policy

Tradition and expediency have unavoidably dictated the emphasis on hospital and curative medicine in the evolution of, firstly, the previously separate territorial and, subsequently, since 1954, the Federal health and medical service. Above all, humanitarian consideration made it essential to concentrate everything—men, money, and supplies—on providing treatment for the masses of the seriously ill.

In recent years, in spite of the need for preventive medicine, the urge in many emerging countries is still to direct most of their limited resources into the construction of showy expensive hospitals. Such an elaborate façade is then all too commonly demonstrated as a symbol of a public duty nobly discharged. It is a doubtful policy, in countries facing burdens likely to become doubly heavier, to concentrate on curative medicine in expensive buildings and to neglect dealing with costly preventable disease.

In the Federation it is clear that the hordes of to-morrow's patients will strain its hospital capacity to breaking-point. No country can deal with such masses in large elaborate central hospitals excessive in their claims on staff, equipment, and buildings. Nor is it possible thereby to bring modern medicine conveniently to remote districts in a country still without easy road, rail, or air communications. Coincidence of several needs calls for a change in emphasis. A strict technical judgment makes it desirable to extend preventive services in rural and urban communities. The villages require their own medical services supplied conveniently through clinics serving as a base for simple curative medicine, district nursing, public health and environmental sanitation, etc. Conversely, multiplying cost in skilled staff and money makes the supply of elaborate hospital services for the large numbers of to-morrow prohibitive. The essential place for a few strategically centred first-rate institutions with specialized departments of medicine and surgery for the whole country is naturally not denied.

It is fortunate that the Federation is well experienced in the use of rural clinics, and the type evolved before Federation in Southern Rhodesia is a proved instrument. This has a few beds, a simple "casualty" theatre, and facilities to deal with large numbers of out-patients. Further services, both curative and preventive, are easily and logically grafted on to it. Such expanded clinics, placed conveniently in all districts, should efficiently yet economically serve to meet the growing demands during the next decade more suitably than a propagation of large central hospitals.

The Federal Government bearing the onus of providing free medical and hospital services for the overwhelming majority of the Federation—an inheritance largely from its predecessors in the territories—now consequently faces two awkward matters of policy.

Firstly, local authorities are not made responsible for the wide range of public-health and preventive medical services commonly associated with them in, say, the United Kingdom or South Africa. A few, like Bulawayo and Salisbury in Southern Rhodesia, and Lusaka and Ndola in Northern Rhodesia, do have properly constituted local health departments, though with somewhat limited range of functions. If the Federation is to continue its process of urbanization, then there may be unwillingness later on the part of new cities to accept health and medical responsibilities, rarely cheap or easy to administer. Yet if the concept of local government is accepted, then transfer of such functions is desirable. It will demand a reversal of the evolution in Europe which produced the central health authorities later than, and out of, self-governing cities and districts. The Federation will be faced with the transfer of some of its present centralized medical services after cities and towns have become adequate in size and resources to be self-contained in their own civic affairs.

The second problem also has its origin in the practice of the past. Africans have been entitled hitherto to free medical and hospital services, the attraction of which to many is one of the causes of rapid overcrowding of all institutions. There are large sections, as noted above, of the European population similarly privileged by virtue of their membership of a number of official services—police, civil servants in the northern territories, etc. Private medical practice has consequently had little opportunity outside the few European urban communities. Only high-level Government policy can now change the pattern. The later there is any wish to change the more likely is there to be opposition. It is therefore important for the Government to decide early whether it wishes to continue providing free services for all Africans and large numbers of Europeans. If so, it commits itself to a socialized medical service which in a relatively few years will be irreversible. There will not then be the private medical practitioners to give service, while even the appearance of a substantial middle-class of Africans will not reduce significantly the likely opposition to any move to introduce fees and charges for Government services or any system of medical insurance. So long as there are free Government medical services there is little prospect of independent medicine growing in the Federation.

The problem is not merely one of the philosophy of which is the most suitable form of medical practice for the future Federal population; it is also one of economics. Unless the population is going to pay for its vast new medical and hospital needs through fees or insurance then it must do so through Government taxes. There is no prophetic gift in stating that the continuation of the present system will require rapidly increasing charges on the national exchequer. This is not peculiar to the Federation—indeed, it is less acute there than in many other countries. It is a world-wide problem. The hope of independent medicine is slight, as most emergent (new) and many old countries develop and extend medical services by State action only. It is the modern trend made almost automatic in the newer countries being assisted by the international (intergovernmental) agencies. It is a phenomenon which surely supplies much food for thought not entirely reassuring to those nervous of over-organization and excessive officialdom.

The Future

Thought of the future—its uncertainty, even its menace—has been dominant in the Federation in the last two years. It is now insistent, and more than any other factor is affecting the efficiency of all services. Men and women who have borne more than ordinary responsibilities in launching and providing public services are now harassed by a sense of futility. In the health services they cannot plan far-sightedly, because to-morrow all may be cancelled; yet hospitals are desperately overcrowded, and disheartened overworked doctors and nurses cannot get relief. Even their immediate arrangements to meet emergencies here and there are hindered by the failure to maintain full staffs—again largely an expression of the influence of the future over the present.

Until the way is politically clearer, planning is not profitable, daily administration is makeshift, and the construction of a vigorous, keen service almost impossible. It seems a sad phase to follow a preliminary period where amalgamation was successful, achievement was great, and the country was rapidly gaining a worthy medical and health service ahead of most other African countries. All will wish this uncertain phase a speedy end. They will wish it to be followed by a time when the medical and nursing staffs will be able to discard doubts: a time when the challenge of service, the appeal of pioneering, and the fascination of unsolved medical and scientific mysteries will reassert themselves in drawing recruits from overseas and locally into the service; a time when, single-mindedly and confident of popular encouragement, the medical services can demonstrate their true potential and worth.

I wish to thank the Secretary for Health, Dr. D. M. Blair, Salisbury, for permission granted in April, 1960, to present this paper.

FIRST INTERNATIONAL CONGRESS OF ENDOCRINOLOGY

[FROM A SPECIAL CORRESPONDENT]

The first International Congress of Endocrinology was held in Copenhagen from July 18 to 23, under the distinguished presidency of Dr. BERNARDO A. HOUSSEY, of Buenos Aires.

This vast meeting covered the whole range of endocrinology, scientific and clinical; it was attended by about 1,400 delegates from 45 countries; 660 papers were read; 10 symposia and a round-table discussion were held; and at any one time between six and eight short communications and one symposium were running concurrently in separate theatres. The organizers of the Congress are to be congratulated on the scrupulous precision with which the time-table was adhered to and the general excellence of the arrangements.

During much of the proceedings, the emphasis was on fundamental processes, such as modes of regulation and actions of hormones; their isolation, structure, synthesis, degradation, and measurement in body fluids; their role in disease; their interplay and complementary actions; and the remarkable properties of new synthetic steroids and antihormones. It was encouraging in this age of extreme specialization to see how many diverse scientific

and clinical disciplines were being drawn together to solve these problems. This report can summarize only a few out of many outstanding contributions, selected either for their clinical interest or to indicate important areas of current research.

Regulation of Anterior Pituitary Secretion

The first symposium was on the regulation of anterior pituitary secretion by the nervous system. Professor G. W. HARRIS (Maudsley Hospital, London) reviewed recent experimental work by his group and others on the hypothalamic control of gonadotrophic and thyrotrophic secretions. When the pituitary gland was isolated from its vascular connexions with the hypothalamus, the release of follicle-stimulating and luteinizing hormones (F.S.H. and L.H.) was abolished, and that of thyrotrophin (T.S.H.) much diminished, but the secretion of luteotrophic hormone or prolactin was unimpaired. The nature of the neurohumors from the hypothalamus which stimulated the release of gonadotrophins and T.S.H. was not known, but ovulation in the rabbit could be induced by infusing minute quantities of a hypothalamic extract into the transplanted anterior lobe. Much headway was being made in defining specific areas in the hypothalamus concerned with the regulation of individual pituitary hormones.

Dr. H. D. PURVES (University of Otago) discussed the significance of an abnormal thyroid-stimulating factor found in the serum of patients with Graves's disease: it seemed to be distinct from T.S.H. and its production was not inhibited by thyroid hormones.

Dr. GEORGE SAYERS (Cleveland, U.S.A.) reviewed recent research on factors which controlled the release of corticotrophin. In the search for a corticotrophin-releasing factor (C.R.F.) several polypeptides of hypothalamic origin had been found which showed this effect in some degree, including vasopressin. (In a later communication Drs. A. V. SCHALLY and R. GUILLEMIN (Houston, Texas) claimed to have separated, by countercurrent distribution, a highly purified hypothalamic C.R.F., distinct from vasopressin but not yet separable from alpha-melanocyte-stimulating hormone (α -M.S.H.). The preparation was active in releasing corticotrophin when given in amounts as small as 0.04 microgrammes.) Dr. Sayers predicted that studies now under way of nervous pathways connected with the hypothalamus, and influencing the release of corticotrophin, might help to explain how emotional states, such as fear and anger, acted on the endocrine system.

Aldosterone

The third symposium was devoted to aldosterone. Dr. GORDON FARRELL (Cleveland, U.S.A.) presented his evidence that the pineal gland contained a "hormonal" substance (now termed adrenoglomerulotropin) which stimulated the adrenal cortex to secrete aldosterone.

As came out in the subsequent discussion, other authorities such as Drs. F. C. BARTTER and J. O. DAVIS (Bethesda, U.S.A.) did not believe that the pineal gland is the primary source of adrenoglomerulotropin. For example, pineal-ectomized animals had a normal electrolyte balance, and decapitation or mid-brain section in dogs, as reported at another session by Dr. J. O. DAVIS, failed to prevent the rise in secretion of aldosterone which followed venesection. The whole subject of the central nervous control of aldosterone has now become confused and controversial. In a short communication Dr. J. GENEST (Montreal, Canada) showed that urinary output of aldosterone was very labile and often raised in essential hypertension, whereas excretion of pregnanetriol was diminished. He did not think that aldosterone was of primary importance in the pathogenesis of essential hypertension. His further finding that infusions of angiotensin II caused a fourfold rise in urinary aldosterone suggested a possible cause for increased excretion of this hormone in these patients.